

USSR

UDC 669.187.26

BUSHMELEV, V. M., TYURIN, YE. I., DUMCHEV, YA. P., KATAYEV, V. M., VOLKOV, S. YE., PUPYNINA, S. M., SHARAPOV, A. A., BAGLAY, V. M., MEDOVAR, B. I., LATASH, YU. V., Krasnyy Oktyabr' Plant, Central Scientific Research Institute of Ferrous Metallurgy and Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Production of 4-Ton Ingots in a Bifilar Electroslog Remelting Furnace"

Moscow, Stal', No 3, Mar 70, pp 236-238

Abstract: The article describes a bifilar electroslog remelting scheme developed at the Institute of Electric Welding imeni Ye. O. Paton, which provides for the melting in one crystallizer of two electrodes, isolated from each other, which are attached to one electrode holder and connected to the ends of the secondary winding of a single-phase transformer with the same power as in a single-electrode furnace. In order to obtain rectangular 640X460 ingots weighing 4 tons, one of the electroslog remelting furnaces of the Krasnyy Oktyabr' Plant, designed for

1/2

USSR

BUSHMELEV, V. M., et al, Stal', No 3, Mar 70, pp 236-238

the production of 2-ton ingots according to the single-electrode scheme and equipped with a single-phase 1000-kva transformer, was remodeled for melting according to the bifilar scheme. Only the mechanical part of the furnace underwent alteration. Slag systems used for the melting included  $\text{CaF}_2\text{-Al}_2\text{O}_3$ ,  $\text{CaF}_2\text{-CaO-Al}_2\text{O}_3$ , and  $\text{CaF}_2\text{-CaO-Al}_2\text{O}_3\text{-MgO}$ . It was found that the production of metal of satisfactory quality in the bifilar furnace requires the same degree of submersion of the electrodes in the slag bath, as well as keeping the electrode spacing unchanged during the melting. This was accomplished with the use of simple devices. The bifilar scheme approximately doubles furnace productivity and reduces electric energy consumption by 25-29 percent. Data are presented on the quality of 4-ton ingots of ball-bearing steel ShKh 15, structural steel 40KhNMA and stainless sheet steels 10Kh12NVMFA (EI962) and Kh23N18 obtained on the bifilar furnace.

2/2

- 23 -

USSR

UDC: 535.14:621.001

BOROVICH, B. L., ZUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu.,  
TYURIN, Ye. L., SHCHEGLOV, V. A.

"Concerning Propagation of a Light Pulse in a Moving Two-Level  
Absorbing Medium"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,  
pp 88-89

Abstract: A solution is found for equations of propagation of  
a monochromatic pulse with arbitrary time dependence  $I_0(t)$   
through a two-level absorbent medium with density of active  
particles  $N_0 = \text{const}$  and velocity  $v(t)$ . It is found that depend-  
ing on the ratio of  $v$  and  $v_0 = 2I_0/N_0$ , there are two modes of  
wave propagation with interface at  $v = v_0$ . The analysis is also  
applicable to a source of emission moving with an arbitrary  
velocity in the medium. Bibliography of six titles.

1/1

- 45 -

USSR

UDC 621.375.82

BOROVICH, B. L., ŽUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu., TYURIN, Ye. L., SHCHEGLOV, V. A.

"On the Propagation of a Light Pulse in a Moving, Two-Level Absorption Medium"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 88-89 (from RZh-Fizika, No. 10, Oct 72, Abstract No 10D845)

Translation: A solution is obtained for the transfer equations for a monochromatic pulse of radiation of an arbitrary time form  $I_0(t)$  in a two-level absorption medium with a density of active particles  $N_0 = \text{const}$  and a velocity  $v(t)$ . It is shown that, depending on the relationships  $v$  and  $v_0 = 2I_0/N_0$ , there exist two modes of propagation of illumination waves with the interface at  $v = v_0$ . The study is also applicable for a radiation source moving with an arbitrary velocity in the medium. 6 ref. Authors abstract.

1/1

Magnetohydrodynamics

USSR

UDC 621.378.9:533.9.02

BASOV, N. G., ZAKHAROV, S. D., KROKHIN, O. N., KRYUKOV, P. G., SENATSKIY, Yu. V.,  
TYURIN, Ye. L., FLDOSIMOV, A. I., CHEKALIN, S. V., SHCHELEV, N. Ya.

"Studies of a Plasma Formed by Ultrashort Laser Pulses"

Moscow, Kvantovaya Elektronika, No. 1, 1971, pp 4-28

Abstract: Experimental studies of processes occurring in the high-temperature heating of a plasma by focusing ultrashort laser radiation on the surface of lithium deuteride are described. Studies of plasma heating with laser radiation of duration  $10^{-11}$ - $10^{-12}$  sec were begun in 1968 at the Laboratory of Quantum Radio-physics of the Physics Institute imeni P. N. Lebedev. Fast neutrons were recorded upon focusing these pulses on the surface of a lithium deuteride target, indicating the rise of conditions for a thermonuclear db-reaction and for obtaining a plasma of high temperature and density. Subsequent research raised the following questions: how does absorption of energy by a solid occur if the laser radiation is concentrated in a pulse with a duration of several picoseconds? How is the strong reflection of laser radiation from the target explained? What are the possibilities of raising ion temperature, and consequently neutron yield, in

1/2

USSR

BASOV, N. G., et al, Kvantovaya Elektronika, No. 1, 1971, pp 4-28

heating a plasma with ultrashort pulses? Shadow photographs of the plasma with illumination by ultrashort pulses and the recording of plasma dispersion with the aid of an electron-optical converter are described. The same electron-optical converter was used to study the change in the reflection of laser pulses with time, and x-ray measurements were made of the electron temperature of the plasma. A review of the basic experimental data indicates that the results are from laser pulses consisting not of one, but of several subpulses. Experiments show that the interaction of each subpulse with the target is not the same but a function of the previous history and repetition time of the subpulse relative to the beginning of the process. Heating of the plasma occurs as follows: one of the first subpulses incident on the target ionizes it to a depth approximately equal to the wavelength of the laser radiation. When the value of  $n_e$  becomes comparable to the value of  $n_{cr}$ , the remaining part of the subpulse is reflected. Heating of the plasma to a temperature of several electron-volts occurs simultaneously with ionization. As a result, the plasma formed is slowly dispersed. All subpulses incident on the target at this stage will be reflected until the particle density drops, as a result of dispersion, to a value corresponding to  $n_{cr}$ . At this time high-temperature heating of the plasma is possible. It is thus established that reflection of ultrasonic pulses arises in plasma regions where the electron density is close to critical. Other subjects discussed in the article include plasma radiation and heat conductivity, the effect of laser radiation pressure, and electron-ion relaxation in a plasma formed by a powerful ultrashort laser pulse.

2/2

- 61 ..

USSR

UDC 621.357.12.035.48:669.75

EUGENOV, YE. S., SAZONOVA, T. V., GOLOVIN, YU. M., and TYURKIN, YU. I.  
"Regeneration of Sulfide-Alkali Electrolytes by Anode Solution of Cast Iron  
Shavings"

Alma-Ata, Khimiya i Khim. tekhnol. (Chemistry and Chemical Technology) Vyp 2,  
1971, pp 160-163 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract  
No 7L373)

Translation: A process is described to remove thiosulfate-, polysulfides, and  
thioantimonates reducing the  $V_{T_k}$  [expansion unknown] of Sb during the electrol-  
ysis of sulfide-alkali solutions by a method of anode solution of cast iron  
shavings. The above ions are scavanged under the influence of the divalent  
iron atoms and precipitate in the form of an insoluble precipitate of ferrous  
sulfide. For a  $D_a$  9.0-9.5  $\mu/m^2$  and a temperature of 50°C the optimum maximum  
reduction in the undesirable impurities was observed. The solution purified  
in the above manner was then treated to remove by electrodesposition the Sb  
at a high energy rate.

1/1

TYURIN, Yu. M.

5485 54888  
10 Jan 72

UNC 666.1:658.3.018

RAISE LABOR PRODUCTIVITY IN GLASS MANUFACTURE

[Article by Yu. M. Tyurin, chief engineer of the main Directorate for the Glass Industry of the USSR Ministry of the Construction Materials Industry, and S. G. Tsibul'skaya, department head of the State Scientific-Research Institute for Glass; Moscow, Steklo i Keramika, Russian, No 11, 1971, pp 4-7]

According to the directives of the 24th Congress of the CPSU, a significant increase is scheduled for the years 1971-1975 in the technical level of industrial enterprises, the speeding up of mechanization and automation of productive processes, and a resulting improvement in the productivity of labor.

In the case of the glass industry, a production increase by a factor of 1.7 is planned for the years of the Ninth Five-Year Plan, with no less than 80 percent of this production increase scheduled to be derived through increased labor productivity.

The principal factors in raising this productivity are, first, the mastery of new technology and an increase in the productivity of the principal technological equipment; secondly -- an increase in the level of mechanization and automation of production and control processes, and, thirdly -- improvement in the organization of production and labor through further specialization, heightened efficiency in the work of the auxiliary services, the use of technically determined production norms, and the adoption of new, progressive forms of organization and production management.

The glass industry has numerous ramifications and turns out a large assortment of widely differing products. Of great relative importance in this industry, however, is the production of structural and engineering glass.



USSR

DUBSON, M. S., SOROKINA, S. G., TYURIN, Yu. N.

"The Best Selection of Factors in a Prediction Problem"

Mat. Metody Resheniya Ekon. Zadach [Mathematical Methods of Solution of Economics Problems -- Collection of Works], No 3, Moscow, Nauka Press, 1972, pp 152-157 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V176, by the authors).

Translation: Suppose  $y = \sum_{i=1}^{\infty} a_i x_i$ , where  $x_1, x_2, \dots$  are independent normal random quantities with parameters  $(0, 1)$ ,  $a_1, a_2, \dots$  are constants. It is assumed that  $n$  independent observations of the  $x$ 's and  $y$ 's are made. Using the method of least squares, they can be used to produce  $m < n$  estimates  $\hat{a}_i$ . Suppose, furthermore, one more sequence of  $x$ 's  $x_1^*, x_2^*, \dots$  is observed, from which we construct the  $y$  prediction  $y_m^* = \sum_{i=1}^m \hat{a}_i x_i^*$ . The question is, with what number  $m$  of selected prediction factors is  $D(y - y_m^*)$  best in the sense of the minimum? This dispersion is calculated. The optimal sample  $m$  depends

1/2

USSR

Dubson, M. S., Sorokina, S. G., Tyurin, Yu. N., Mat. Metody Resheniya Ekon. Zadach, No 3, Moscow, Nauka Press, 1972, pp 152-157.

on the structure of sequence  $a_i$ , for which  $m$  may take on any value. Similar calculations are performed as  $i$  to minimization of losses made up of the dispersion of the prognosis and the payment for observations of the  $x$ 's.

2/2

- 17 -

Iyurina, R.T.

SPRS 56,459  
14 JULY 72

145

Analysis of thermometric data revealed that in experiments conducted at normal barometric pressure and in experiments within the limits of physiologic variations. Beginning with the third day there was an intensive increase in skin temperature primarily in the region of the distal parts of the extremities in the range 2-2.4°. As the same time there was a temperature increase in the rectum in the range 0.7-1.1°. With 4% CO<sub>2</sub> in the surrounding medium there were no qualitative changes in temperature. However, an analysis of the absolute changes in temperature made it possible to note that in this case the increase in rectal temperature was somewhat less (0.4-0.5°). In a 5% hypercapnic medium the skin temperature

not impossible that in small cubs there may be an accumulation of CO<sub>2</sub> which forms in the metabolism process. According to members of flight crews during real flight it is exceedingly important to know the influence of CO<sub>2</sub> on the human body in General and its temperature in particular.

Article by I. R. Abramov, I. I. Antonov and R. T. Iyurina (Current Presentations of the 10th International Congress on Space Biology and Medicine), Moscow, 1971, pp 321-327.

HUMAN SKIN THERMOTOGRAPHY AND BODY TEMPERATURE DURING PROLONGED EXPOSURE IN A HYPERBARIC ATMOSPHERE AT NORMAL AND REDUCED BAROMETRIC PRESSURES

Tyurina, R.T.

SPRS 576499  
14 JULY 72

112

jectives in mind: determining the minimum altitudes at which  
visible gas emboli appear in the blood and study of the ex-  
ternal symptoms of high-altitude decompression disorders in  
animals.

The need has arisen for developing regimes for man's  
transition from normal pressure to reduced pressure which  
would completely preclude the possibility of the appearance  
of decompression disorders. This in turn required that sys-  
tematic investigations be made for clarifying the appearance  
for the appearance of decompression disorders in a rarefied  
atmosphere and for studying their peculiarities in a rarefied  
of development. Such investigations have not yet been made  
because the problem of decompression disorders has not yet been de-  
veloped experimentally for the most part applicable to under-  
water dives and elison work.

As a result of the development of oceanic activities the  
problem of decompression disorders arising due to atmospheric  
rarefaction has arisen with a new acuteness. It has been  
found that the recommendations on the prevention of decom-  
pression disorders taken in aviation cannot be used during  
space flights. Investigations have shown that for conditions  
of man's prolonged exposure at a pressure of 170 mm Hg when  
performing an intensive physical load even a six-hour prelim-  
inary nitrogen desaturation does not give any guaranteed  
against decompression disorders.

EXPERIMENTAL DATA ON DECOMPRESSION DISORDERS ACCOMPANYING  
ATMOSPHERIC RAREFACTION  
Article by R. T. Tyurina and N. Y. Lomtsova, Moscow,  
Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current  
Problems in Space Biology and Medicine), Moscow, 1971, pp  
267-269.

1/2 026 UNCLASSIFIED PROCESSING DATE--020CT70  
TITLE--DYNAMIC MECHANICAL PROPERTIES OF MULTICOMPONENT POLYMERIC  
COMPOSITIONS -U-  
AUTHOR--(05)-AIVAZOV, A.B., ZHIVAYEV, V.YA., NIKIFOROVA, A.V., ZELENEV,  
YU.V., TYURINA, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--MEKH. POLIM. 1970, 6(1), 138-41  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ELASTIC MODULUS, CARBON BLACK, POLYISOPRENE, POLYSTYRENE  
RESIN, POLYPROPYLENE, POLYVINYL CHLORIDE, LOW TEMPERATURE EFFECT, HIGH  
TEMPERATURE EFFECT/(U)SKI3 POLYISOPRENE, (U)SKMS30 METHYLSTYRENE RUBBER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0815 STEP NO--UR/0374/70/006/001/0138/0141  
CIRC ACCESSION NO--AP0107357  
UNCLASSIFIED

272 026

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107357

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMIC ELASTICITY MODULUS (E) AND TAN(MECH. LOSS ANGLE) WERE DETD. FOR BINARY (RUBBER PLASTIC) AND TERNARY (RUBBER, PLASTIC, CARBON BLACK (I)) SYSTEMS BY THE METHOD OF FORCED NON RESONATING VIBRATIONS. THE TEMP. DEPENDENCE OF E PERMITTED TO CALC. THE ACTIVATION ENERGY (U) OF E CHANGE. IN THE LOW TEMP. REGION (SIMILAR TO MINUS 50DEGREES) U IS 13.4-13.8 KCAL-MOLE; IN THE HIGH TEMP RANGE (SIMILAR TO 160-50DEGREES) U IS 21.9-28.7 KCAL-MOLE FOR T4E FOLLOWING AND SIMILAR SYSTEMS: 100:20 SKI-3-POLYPROPYLENE (II); 100:15 SKMS-30-II; 100:60 SKI-3-I; 100:10:60 SKI-3-MARBON 8000 A-I; 100:10:60 SKI-3-POLY(VINYL CHLORIDE)-I.

UNCLASSIFIED

Acc. Nr:

00049805

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:

4R0135

101609x Properties of rubbers from SKMS-30 ARKM-15 modified with plastic materials. Tyurina, V. S.; Shveris, A. G.; Eitington, I. I. (Nauch. Issled. Inst. Shim. Prom., Moscow, USSR). *Kauch. Rezina* 1970, 29(1), 8-10 (Russ). The physico-mech. properties of SKMS-30 ARKM-15 (I) vulcanizates containing 3-12% butadiene-styrene copolymer (Marbon 8000A), high-pressure polyethylene, low-pressure polyethylene (II), ethylene-propylene copolymer (III), isotactic polypropylene (IV), polyamide copolymer 548 (V), and poly(vinyl chloride) and the processability of carbon black-filled I mixts. were studied. Introduction of II, IV, and V to carbon black-filled I mixts. brought about a substantial increase in viscosity, tear strength, and 100% modulus, and reduced creep at high temps. III increased the values of all these properties. The reinforcing effect of II and IV in unfilled rubber depended on the m.p. of the cryst. phase and the vulcanization temp. Elastomers obtained at a temp. below the m.p. of the plastics exhibited superior 100% modulus, tensile strength, and tear strength. CKJR /

REEL/FRAME  
19801727

7

USSR

USSR  
Adsorption

1  
BELITSKIY, I. A., SUCHEBATYUK, N. YE., KRASNOVA, L. V., FILIZOVA, L. D.,  
TYURINA, YE. F.

"Sorption Properties of Cation-Substituted Forms of Clinoptilolite"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSR -- Seriya  
Khimicheskikh Nauk, No 1, 1973, pp 84-87

Abstract: This paper is a continuation of the study of the sorption and molecular-screen properties of high-silicon heulandite-clinoptilolite, the natural forms of which were investigated previously [I. A. Belitskiy, et al., Izv. Sib. Otd. AN SSSR, ser. khim. nauk, No 14, vyp. 6, 1971]. Just as before, monomineral (~99%) clinoptilolite from Bulgaria was used in the study:  
 $(Ca_{1.26}Mg_{0.29}K_{1.58}Na_{1.34}) \cdot [Al_{6.05}Si_{30.00}O_{72}] \cdot 16.59 H_2O$ .

The study was made of the sorption properties of the clinoptilolite with respect to water vapor and methanol and six samples of cation-sensitive forms obtained by ion exchange based on clinoptilolite with lithium, sodium, potassium, rubidium, cesium and thallium ions as the "consolidated" cations.

1/2



USSR

①  
BELITSKIY, I. A., ET AL., Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSR --  
Seriya Khimicheskikh Nauk, No 1, 1973, pp 84-87

A reduction in the sorptive power was discovered going from the lithium cation form to the cesium cation form. This is connected with the reduction and degree of hydration of the cations increasing in size and also with a decrease in the free volume of the cavities.

The parameters of the microporous structure of the indicated sorbents were calculated on the basis of the Dubinin-Radushkevich theory of volumetric filling of the micropores. The lithium, sodium and potassium forms of clinoptilolite are characterized by the greatest sorption volume equal to 0.22-0.110.

2/2

- 1 -

USSR

TYURYAKOV, S. V.

UDC 517.941

"General Case of Multiple Eigenvalues of the Two-Point Boundary Value Problem for Linear Differential Operators"

Tr. Mosk. ekon.-statist. in-ta (Works of Moscow Economic Statistics Institute), 1970, No. 3, Part 1, pp 46-58 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B281)

Translation: The following boundary value problem is studied ( $x \in [a, b]$ ):

$$y_l'(x) = \sum_{j=1}^m P_{lj}(x, \lambda) y_j(x), \quad l=1, \dots, m,$$

$$\sum_{j=1}^m [\alpha_{\mu j}(\lambda) y_j(a) + B_{\mu j}(\lambda) y_j(b)] = 0, \quad \mu=1, \dots, m,$$

where  $P_{lj}(x, \lambda)$  are functions that are continuous together with their derivatives with respect to  $x$ , and  $P_{lj}(x, \lambda)$ ,  $\alpha_{\mu j}(\lambda)$ ,  $\beta_{\mu j}(\lambda)$  are integral analytical functions with respect to  $x$  over the entire complex  $\lambda$ -plane. A theorem is

1/2

USSR

TYURYAKOV, S. V., Tr. Mosk. ekon.-statist. in-ta, 1970, No. 3, Part 1, pp 46-58  
proved concerning the convergence of sequences of eigenvalues of the corresponding finite difference problems to eigenvalues of the given problem in the case of a multiple of its value. L. Yeshukov.

2/2

- 2 -

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--SKELETAL ISOMERIZATION DURING ISOPENTANE DEHYDROGENATION IN A  
FLUIDIZED BED OF K 5 CATALYST -U-  
AUTHOR--MIKHAYLOV, R.K., BUSHIN, A.N., TYURYAYEV, I.YA., KHRIPINA, S.M.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1) 3-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUIDIZED BED, ISOMERIZATION, ISOPENTANE, CATALYTIC  
DEHYDROGENATION, PENTANE, PENTENE, CATALYST/(U)K5 CATALYST  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1985/1451 STEP NO--UR/0064/70/046/001/0003/0007  
CIRC ACCESSION NO--AP0101537  
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0101537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEHYDROGENATION OF ISOPENTANE IN AN 8 SECTION FLUIDIZED BED APP. WIT K 5 CATALYST WAS CARRIED OUT AT LARGER THAN OR EQUAL TO 580DEGREES WITH FLOW RATE 120 VOLS.-HR. PRETREATMENT OF THE CATALYST BY HEATING TO 640 TO 500DEGREES IN BUTANE OR "ABGAS" (70 VOL. PERCENT H SUB2, 2PERCENT CO, 13PERCENT N, BALANCE C SUB1- C SUB5 HYDROCARBONS) INCREASED THE YIELD OF ISOPENTENES, E.G. FROM 30 TO 35PERCENT AT 580DEGREES, AND ALSO INCREASE THE YIELD OF N,PENTENES FROM 3.5 TO 4.5PERCENT BUT HAD NO EFFECT ON THE YIELD OF PIPERYLENE (SIMILAR TO 1PERCENT). THE RATIO OF 1,PENTENE TO 2,PENTENE IN THE PRODUCT WAS 1:3 TO 5. SMALL AMTS. N,PENTANE WERE ALSO FORMED IN THE REACTION AND ADDN. OF 5 TO 7PERCENT N,PENTANE TO THE STARTING ISOPENTENE SUPPRESSED ALMOST COMPLETELY THE ISOMERIZATION OF THE ISOPENTENE, ALTHOUGH THE MECHANISM OF THIS EFFECT IS NOT CLEAR. THE RATIO OF 2,METHYL,2,BUTENE,2,METHYL,1,BUTENE,N,PENTENES IN THE PRODUCT (OBTAINED BY USING THE PRETREATED CATALYST) WAS 100:60:14:13.

UNCLASSIFIED

Publications

USSR

TYURYUKANOV, A. N.

Biosfera i Chelovechestvo (The Biosphere and Humanity), Moscow, Znanie Publishing House, Seriya Biologiya, No 12, 1973, 64 pp

Translation: Annotation: The author considers the history and current state of problems of the biosphere. He discusses the concept of the biosphere, its evolution, constituent elements, and structure, as well as the biogeochemical function of humanity. He points out the boundaries of the biosphere and the vitasphere, and explains the theory of biogeocommunities and the role of plants and soil animals in their life.

This booklet considers the system of interrelations in the biosphere and human influence on the biosphere and its elements.

Table of Contents:

The Biosphere

From the History of the Theory of the Biosphere	Page 6
The Role of Living Matter in the Geochemistry of the Planet	9
The Vitasphere and the Biogeo-Community	15
Human Activity and the Protection of Nature	24
Industrial Dumps and Their Recultivation	29
	33

1/2

USSR

TYURYUKANOV, A. N., Seriya Biologiya, No 12, 1973, 64 pp

Problems of Increasing the Planet's Biological Productivity	37
The International Program "Man and the Biosphere"	42
Research in the Area of Ecosystems	46
Research in the Area of Human Ecology	48
Using and Preserving Genetic Resources	49
Rational Use of Natural Resources	50
Investigating Pollution and Monitoring It	51
Training on the Elementary and Secondary Level	53
Teaching Ecology at the University Level	54
Training and Research Centers for Rational Use of and	
Preserving the Resources of the Biosphere	55
Non-School Education About the Environment for Young People	
and Adults	56
Science and Resource Policy	57
Preserving Endangered Natural Zones and Species	58
Conclusion	60
2/2	

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--SOME ASPECTS OF TEACHING ON THE BIOSPHERE AND BIOGEOCENOSIS -U-

AUTHOR--TYURYUKANOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (4), 46-52

DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, BIOLOGICAL AND MEDICAL  
SCIENCES

TOPIC TAGS--BIOSPHERE, MAN, TEACHING METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3009/0180

STEP NO--UR/0325/70/000/004/0046/0052

CIRC ACCESSION NO--AP0139043

UNCLASSIFIED



2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0139043  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPORTANCE OF THE STUDY OF THE  
LAWS OF THE BIOSPHERE AND BIOGEOCENOLOGY FOR SOLVING THE PROBLEMS OF THE  
RELATION OF MANKIND AND THE BIOSPHERE WAS DISCUSSED.

UNCLASSIFIED

Acc. Nr.: **AP0029510**

Ref. Code: UR 0240

PRIMARY SOURCE: Gigiyena i Sanitariya, 1970, Nr 1, pp 61-66

FEATURES TO PECULIAR GLOBAL CESIUM-137  
AND STRONTIUM-90 REACHING THE POPULATION  
OF POLECIA BY DIFFERENT FOOD SUPPLY ROUTES

A. N. Marey, R. M. Barkhudarov, V. K. Chumak, E. V. Petukhova,  
E. B. Tyurukhanova, G. A. Kuznetsova, N. Ya. Novikova,  
S. B. Pozhivilova, G. A. Bogdanovich

The paper presents investigation data on the order of passage of abovementioned isotopes from the soil into food products with due regard for the soil nature and the accumulation of isotopes in the human body. The finding was that the extent of the passage of cesium-137 from the soil into food products fluctuated considerably and depended on the type of soil. Thus, in a soil consisting mainly of a sand fraction the passage of cesium-137 was more pronounced. Similar observation were made in respect to all of the objects examined. However, no differences in the migration of strontium-90 could be detected. Due to the high passage of cesium-137 into food products its content in the human body was high as well.

REEL/FRAME

19681111

USSR

UDC 621.374.5(088.6)

TYUSHEV, V. S., KONDRAT'Y, A. V., TIMOFEYEV, Yu. V., SHELUD'KO, O. V.,  
Northwest Polytechnical Correspondence Institute

"A Wide-Band Ultrasonic Delay Line"

USSR Author's Certificate No 287101, filed 27 Apr 67, published 7 Apr 71  
(from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11G335 P)

Translation: This Author's Certificate introduces a wide-band ultrasonic delay line whose ultrasonic channel is made in the form of a piezoelectric plate with damper devices on the ends of the plate and with metallic input and output electrodes vaporized on the plate. Connected between the input and output electrodes is a feedback circuit which contains a wide-band pulse generator. To extend the range of the delay time, a slave pulse generator is connected in the feedback circuit. This pulse generator is controlled through a switching device from a coincidence gate. The outputs of a time delay pickup and a pulse counter are connected to the input of the coincidence gate. One input of the pulse counter is connected to the output electrodes of the ultrasonic channel, while the other is connected to the coincidence gate. The delayed signal is taken off from the output of the coincidence gate. Resumé.

1/1

USSR

UDC:666.1.036.23

KRAS'KO, A. S., Engineer, KAKHANOVICH, V. S., TYUSHKEVICH, N. I., Candidates of Technical Sciences, CHEPURKIN, A. A., Engineer, Belorussian Affiliate of Power Institute Imeni, G. M. KRZHIZHANOVSKIY

"Frequency Sensor for Continuous Testing of Glass Fiber Thickness During Production"

Moscow, Steklo I Keramika, No 9, Sep 1970, Pages 16-18

Abstract: Methods currently used for testing the thickness of glass fiber are "passive," that is, performed after production and have low reliability. This article presents certain results from the investigation of a frequency method of testing the thickness of glass fiber during production. The method is based on the relationship between natural oscillating frequency of a drawn string and linear mass and tightness. An experimental model of a frequency sensor has been developed. Production tests of the sensor have confirmed its useability. The error does not exceed 4%, with 95% confidence. In the device, a vibrator forming one end support of the length of fiber drawn causes the fiber to oscillate, and the frequency of natural oscillations is measured by a photosensor.

1/1

USSR

UDC 621.374.33(088.8)

TYUSHKIN, V. A., IVANOV, R. F.

"Device for Quenching a Thyristor"

USSR Author's Certificate No 251073, Filed 4 Jul 68, Published 3 Feb 70, (From RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G279 P)

Translation: This author's certificate introduces a device for quenching a thyristor. The device contains a commuting capacitor and transformer, the primary winding of which is connected in series to the thyristor, and the secondary winding, in series to the capacitor. For simplification, a dynistor is connected between the point at which the capacitor plate and the secondary winding are joined and the thyristor cathode.

1/1

- 107 -

USSR

UDC 669.715.018.29.539.341.9

MAKAROV, A. I., TYUTEVA, N. D.

"Influence of Ultrasonic Oscillations on Structure and Properties of AK-4 Aluminum Alloys"

Avtomatiz. Proizv. Protsessov. v Mashinostr. Metalloved. Term. Obrabotka Met. i Svarochn. Proiz-vo. Ch. 4 [Automation of Production Processes in Machine Building, Metal Science, Heat Treatment of Metals and Welding Production, Part 4 - Collection of Works], Tomsk University Press, 1970, p. 219. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I674 by V. Bochkareva).

Translation: Tests were performed on crystallizing Al alloys before the beginning of crystallization (C), at the moment of C, and after completion of C. The frequency of US oscillations was 440 KHz. The greatest change in the structure and properties was produced when US oscillations were applied at the moment of C.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ELECTRON MULTIPLIERS OF THE OPEN TYPE --U-  
AUTHOR--TYUTIKOV, A.M.  
COUNTRY OF INFO--USSR  
SOURCE--USP. FIZ. NAUK 1970, 100(3), 467-503  
DATE PUBLISHED-----70  
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS  
TOPIC TAGS--ELECTRON MULTIPLIER, SECONDARY ELECTRON, RADIATION DETECTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/2261 STEP NO--UR/0053/70/100/003/0467/0503  
CIRC ACCESSION NO--AP0125839  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125839

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS GIVEN OF THE VARIOUS TYPES OF CONSTRUCTION FOR SECONDARY ELECTRON MULTIPLIERS, PARTICULARLY THE FEATURES OF THE OPERATION OF OPEN TYPE MAPLIERS AND THE MATERIALS OF THE DIODES AND CATHODES. HYPOTHESES ARE REVIEWED OF THE PROCESSES WHICH TAKE PLACE DURING THE REACTION OF THE EMITTING SURFACES WITH AIR AND WITH THE ELECTRON BEAM, WHICH DET. THE APPROACH FOR EVALUATING THE MULTIPLIERS AS RADIATION DETECTORS AND THE REGION FOR THEIR APPLICATION.

UNCLASSIFIED



USSR

UDC 535-31:576.8.06

TYUTIKOV, F. M. and POLYAKOV, V. A.

"Comparison of the Bactericidal Effect of Ultraviolet Radiation on Pathogenic Microorganisms: *Bacterium necrophorum*, *Clostridium botulinum*, and *Listeria monocytogenes*"

Moscow, Doklady Vsesoyuznoy Akad. Sel'sko-Khoz. Nauk, No 5, 1973, pp 36-37

Abstract: Six *Bacterium Necrophorum*, 4 *Clostridium botulinum*, and 10 *Listeria monocytogenes* strains were exposed to ultraviolet light and their resistance evaluated on the basis of the dose-effect curve, slope of the exponential part, LD<sub>37</sub> or LD<sub>90</sub>, and extrapolation number. Virulence, growth phase, type of serotype, and incubation temperature (only in the case of *Listeria*) were also taken into account. No correlation was detected between virulence, type or serotype and degree of resistance to radiation was detected. The curve of inactivation by ultraviolet radiation was sigmoid for most of the strains studied.

1/1

- 19 -

USSR

UDC 005.513.5:025.135(088.8)(47)

GOLDYREV, V. I., KARELIN, B. V., TYUTIKOV, L. S., Scientific Research Institute of Control Computers and Systems

"A Device for Retrieving Edge-Punched Cards"

USSR Author's Certificate No 318969, Division G, filed 9 Mar 70, published 24 Jan 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B344P)

Translation: A device is proposed which contains a base, a vibration platform, a punchcard magazine with support strips, and selector racks which are kinematically coupled to the keyboard levers of the code set-up mechanism. In order to increase speed, the device contains double-arm levers with the selector rack fastened on one arm, while the other arm is connected to the keyboard lever of the code set-up mechanism. Four illustrations.

1/1

- 59 -

Computers: Digital

USSR

DOC: 005.013.5:025.135

GOLDYREV, V. I., KARELIN, B. V., TYUTIKOV, L. S., Scientific Research  
Institute of Control Computers and Systems

"A Device for Retrieval of Edge-Punched Cards"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 32, Nov 71, Author's Certificate No 318969, Division G, filed 9 Mar 70,  
published 28 Oct 71

Translation: This Author's Certificate introduces a device for retrieval  
of edge-punched cards. The unit consists of a base, a vibration platform,  
a punchcard magazine with support fingers, and selector racks which are  
kinematically coupled to the key levers of a code setup mechanism. As a  
distinguishing feature of the patent, the speed of the device is increased  
by using two-armed levers with a selector rack coupled to one arm and a  
key lever of the code setup mechanism connected to the other.

1/1

USSR

UDC 621.382.2/3.012

TYUTIN, A. A., PINSON, A. M.

"Calculating the Conditions and Parameters of Transistors and Diodes in Circuits With a Distinct Linear Section"

Avtomatiz. proyektir. v elektron. Resp. mezhved. nauch.-tekhn. sb. (Design Automation in Electronics. Republic Interdepartmental Scientific and Technical Collection), vyp. 2, Kiev, "Tekhnika", 1970, pp 29-34

Abstract: The authors consider algorithms for computing the conditions and differential parameters of transistors and diodes in circuits with a distinct linear section. A very simple example is presented. Two tables, five illustrations, bibliography of three titles.

1/1

12 -

USSR

UDC 681.3

2

BORKOVSKIY, B. A., VOLLERNER, A. N., KATKOV, A. F., AULIK, M. N., ROMANTSOV, V. P.,  
TYUTIN, A. A.

"Modeling Mathematical Machines with Variable Structure"

Modeliruyushchiye Matematicheskiye Mashiny S Peremennoy Strukturnoy, [English Version Above], Kiev, Nauk. Dumka Press, 1970, 248 pages, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V602 K, unsigned).

Translation: Results are presented from theoretical studies of models with variable structure, designed for modeling of mathematical operations, systems of finite equations and linear differential equations. Significant attention is given to methods of studying models with variable structure and recommendations are given for their engineering planning. The book is designed for engineers, scientific workers and graduate students interested in electronic modeling.

1/1

- 47 -

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SOLUTION OF THE THIRING MODEL IN THE CANONICAL FRAMEWORK -U-  
AUTHOR--TYUTIN, I.V.  
COUNTRY OF INFO--USSR  
SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 2, PP  
212-227  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--QUANTUM FIELD THEORY, ELECTROMAGNETIC FIELD, MESON, FERMION, S  
MATRIX  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/0657 STEP NO--UR/0646/70/003/002/0212/0227  
CIRC ACCESSION NO--AP0129822  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129822

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A METHOD OF CONSTRUCTING THE RIGOROUS CANONICAL QUANTUM FIELD THEORY IS PROPOSED, TAKING INTO ACCOUNT THE LACK OF DETERMINACY OF SUCH QUANTITIES AS  $\bar{\psi}\psi$   $\gamma_\mu$   $\psi$   $\psi^\dagger$  AND THE SOLUTION OF THE THIRRING MODEL IN TWO DIMENSIONAL SPACE TIME IS FOUND BY MEANS OF THIS METHOD. THE OPERATORS OF THE ELECTROMAGNETIC CURRENT, MESON AND FERMION FIELDS, AND THE S MATRIX ARE CONSTRUCTED IN THE INTERACTION PICTURE. ALL WIGHTMAN AXIOMS ARE SHOWN TO BE VALID IN THE THIRRING MODEL. FACILITY: FIZICHESKIY INSTITUT IM. P.N. LEVEDEVA AKADEMII NAUK SSSR.

UNCLASSIFIED

USSR

UDC 617.54-02:617.55-001.12-092.9]-073.75

TYUTIN, L. A., VOLOSHIN, V. G., and KRASNYKH, I. G.

"X-ray Study of the Thoracic Organs During Decompression of the Lower Half of the Body"

Moscow, Vestnik Rentgenologii i Radiologii, No 2, 1971, pp 26-30

Abstract: Healthy male subjects 20- to 25-years old were subjected to negative pressures of 40 mm Hg for 20 min and 80 mm Hg for 10 to 20 min after a rest period while lying on their backs in a special container with elastic girdles around their waists. X-rays taken at the end of the diastole revealed the presence of shifts normally observed after accelerations in a head-pelvis direction: downward displacement of the diaphragm and higher position of the lungs, decrease in the main dimensions of the heart (especially the length), decrease in blood flow in the vessels in the upper portions of the lungs, and some reduction in the diameter of vessels in the lower portions, decrease in the diastolic volume and filling of the heart cavities with blood, increase in the angle of slope of the cardiac axis, and marked increase in blood flow to the heart after rapid normalization of the pressure.

1/1



1/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--CONCENTRATION OF FREE AMINO ACIDS IN THE BLOOD OF PATIENTS WITH  
UTERINE CANCER DURING SURGICAL AND RADIATION TREATMENT -U-

AUTHOR--(05)-TYUTIN, L.A., NIKITINA, M.P., SEREGIN, M.S., TYUTINA, YE.M.,  
UDALOVA, I.YE.

COUNTRY OF INFO--USSR

SOURCE--VOP. ONKOL. 1970, 16(2), 29-33

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, REPRODUCTIVE SYSTEM, CANCER, SURGERY,  
RADIOTHERAPY, PAPER CHROMATOGRAPHY, ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1998/0251

STEP NO--UR/0506/70/016/002/0029/0033

CIRC ACCESSION NO--AP0120941

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120941

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONC. OF FREE AMINO ACIDS WAS INVESTIGATED BY PAPER CHROMATOG. IN THE BLOOD OF WOMEN WITH UTERINE MALIGNANCY, AFTER SURGERY OR RADIOTHERAPY. IN CASES OF MALIGNANCY, A RISE IN THE LEVEL OF CYSTINE, SERINE, GLYCINE, TRYPTOPHAN AND PHENYLALANINE WAS RECORDED, WITH A FALL IN HISTIDINE, GLUTAMINE, AND GLUTAMIC ACID. AFTER DRASTIC SURGERY, LEVELS RETURNED TO NORMAL BY 3 WEEKS. THE INCREASES WERE GREATER IN ADVANCED CASES. AFTER RADIOTHERAPY, THE VALUES TEND TO BE HIGHER, AND MAY BE DUE TO CHANGED ACTIVITY OF CERTAIN ENZYME SYSTEMS. FACILITY: S. M. KIROV MIL. ACAD. MED. SCI., LENINGRAD, USSR.

UNCLASSIFIED

TYUTIN, V.K.

INTEGRAL METHOD OF STUDYING THE TERMINAL AND BOUNDARY EFFECTS IN MAGNETOHYDRODYNAMIC CHANNELS WITH NONUNIFORM DISTRIBUTION OF THE PARAMETERS OF THE CONDUCTING LIQUID

(Abstract of a Paper by D. A. Bug, L. K. Korolev, Yu. N. Nikitin, I. A. Nikitina, V. K. Tyutin Given at a Magnetohydrodynamic Conference, pp. 112-114)

When studying the terminal and boundary effects in magnetohydrodynamic channels, it was decided to use the kinematic approximation when the velocity of the hydrodynamic problem or the conductivity distribution  $\sigma$  are given from the velocity solutions were obtained in the form of infinite series. A study was made of the effects of the magnetohydrodynamic channel. Some of the problems with the variable  $v$  were investigated in [1]. The proposed integral method of investigation of the terminal and boundary effects permits consideration of the nonuniformity of the velocity and conductivity profiles and obtaining an exact solution in a broad class of problems.

The potential distribution for  $\phi$  and the current density  $j$  during the flow of a conducting liquid with  $\sigma = \text{const}$ ,  $R_0 \ll 1$  and  $\beta \ll 1$  are found from the equations

$\Delta \phi = \text{div } j$ ;  $j = -\sigma \nabla \phi + \sigma \nabla \phi$  (1), (2)

The solution of equation (1) for the two-dimensional region in integral form has the form

$$\phi(x, y) = \frac{1}{2\pi\sigma} \left[ \int_{\Gamma} \frac{\partial \phi}{\partial n} \frac{\partial \phi}{\partial n} d\Gamma - \int_{\Gamma} \frac{\partial \phi}{\partial n} \frac{\partial \phi}{\partial n} d\Gamma \right] \quad (3)$$

where  $G(x, y)$  is the Green function.

For a number of problems the Green function can be constructed by using the conformal transforms of the given regions into canonical. This method can be used to solve the problems of the entry and exit of the conducting medium in the magnetic field in the constant-cross section and variable-cross section

SPS-60634  
27 November 1973

USSR

UDC: 537.5.62

BERTINOV, A. I., ~~TYUTIN, V. K.~~, and KHVESYUK, V. I., Moscow Aviation Institute  
imeni S. Ordzhonikidze

"Methods for Determining the Fields of the Coefficients of Radiation of an Ionized  
Gas in Rectangular Channels"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 1, Jan-Feb 1972, pp 35-40

Abstract: The authors study the problem of determining the local coefficients of radiation of an ionized gas. A general expression is derived which relates integral intensities and the local coefficients of radiation  $\epsilon(x,y)$  for flows of arbitrary cross section. In the case of flows of rectangular cross section, this expression reduces to a system of linear algebraic equations. A simplified method is proposed for determining radiation coefficients. This method is suitable in those cases where  $\epsilon(x,y)$  can be presented in the form of the product of two functions each of which depends only on one argument. The authors thank D.A. But for his helpful discussion and comments. Original article: 14 formulas, three figures, and five bibliographic entries.

1/1

USSR

UDC: 621.357.7

BOGOSLOVSKIY, V. V., TYUTINA, K. M., MUZYCHENKO, L. A., KUDRYAVTSEV, N. T.

"Optimization of the Process of Electrodeposition of Nickel-Antimony Alloy"

Moscow, Zashchita Metallov, Vol 9, No 3, Jul-Aug 73, pp 455-456.

Abstract: An experimental-statistical method is used to construct a mathematical model of the process of electrodeposition of shiney nickel-antimony alloy deposits with minimum internal stress. The optimization parameters selected were the diffuse-scattered light intensity and the internal stresses in the alloy, expressed in ocular microscope divisions. The experimental data, following statistical checking, were used to produce two equations to calculate the conditions of deposition of the nickel-antimony deposits with minimum internal stresses:  $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$  59 g/l;  $\text{SbF}_3$  3 g/l;  $\text{NH}_4\text{Cl}$  21 g/l;  $\text{NH}_4\text{F}$  41 g/l;  $D_c = 0.5-6 \text{ a/dm}^2$ ; pH 4.5; temperature  $70^\circ$ ; antimony anodes.

1/1

- 82 -

USSR

UDC 669.24'6.018.9(088.8)

KUDRYAVTSEV, N. T., TYUTINA, K. M., KOSMODAMIANSKAYA, L. V.

"Method of Electrolytic Deposition of Tin-Nickel Alloy"

USSR Author's Certificate No 310951, filed 26 Mar 70, published 1 Oct 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G318P)

Translation: A procedure is proposed for electrolytic deposition of Sn-Ni alloy and an electrolyte containing  $\text{NiCl}_2$ ,  $\text{SnCl}_2$ ,  $\text{NH}_4\text{F}$ . It is distinguished by the fact that in order to increase the admissible D to obtain light bright deposition of the alloy, chloral hydrate is introduced into the electrolyte with the following content of the components (in g/l):  $\text{NiCl}_2$  300-350,  $\text{SnCl}_2$  45-50,  $\text{NH}_4\text{F}$  60-65, chloralhydrate 0.5-2.0. The process is carried out at a pH of 4-4.5, a temperature of 52-55°, and  $D_c = 0.5-4$  a/decimeter<sup>2</sup>. The anodes are nickel, and  $S_A:S_C = 2:1$ . The alloyed deposits obtained contain 34-38% Ni.

1/1

- 43 -

USSR

UDC 669.76'6.018.9(088.8)

KUDRYAVTSEV, N. T., TYUTINA, K. M., GAVRILINA, L. P., and GAVRILIN, O. N.,  
Moscow Institute of Chemical Technology imeni D. I. Mendeleev

"Method of Electrolytic Deposition of Tin-Bismuth Alloy"

USSR Authors' Certificate No 305208, Cl. C 23 b 5/38, filed 3 Feb 70, published  
13 Jul 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G171P)

Translation: The method of electrolytic deposition of Sn-Bi alloy from an electrolyte containing  $\text{SnSO}_4$ ,  $\text{Bi}(\text{NO}_3)_2$ ,  $\text{H}_2\text{SO}_4$  is unique in that, in order to raise the permissible current density limit and increase electrolyte stability, preparation OS-20 is put into the electrolyte in the following ratio of components (in g/liter):  $\text{SnSO}_4$  50-55,  $\text{Bi}(\text{NO}_3)_2$  0.5-0.8,  $\text{H}_2\text{SO}_4$  95-105, preparation OS-20 2-5, and the process is carried on at  $D = 0.5-2$  a/sq decimeter and temperature of  $20-25^\circ$ .

1/1

USSR

MAGZUMOV, B. Kh., SAIYANTS, T. I., TYUTINA, V. A., STARTSEVA, L. I., and GILMANOVA, G. A., Chair of Social Hygiene and Public Health Organization, Tashkent Medical Institute

"Study of Basic Cardiovascular Diseases in Tashkent From a Sociosanitary Aspect"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 39-44

Abstract: The voluminous statistical data on the death rate due to cardiovascular diseases in the Soviet Union indicate that these diseases are the number-one killers. Not only medical but also sociohygienic and socioeconomic measures must be taken to combat this set of diseases; however, the etiology, pathogenesis, and treatment have not yet been studied in detail. A study was made of the characteristics of cardiovascular diseases in relation to work and living conditions, characteristics of the spread of cardiovascular pathology in nosological forms, and analysis of cardiovascular diseases with time loss in work capacity, disability, and death. Data from the medical-prophylactic records in Tashkent were used. Data on workers from various Tashkent industries were included. Among this group

1/2



USSR

MAGZUMOV, B. Kh., et al, Meditsinskiy Zhurnal Uzbekistana, No 10, Oct 70, pp 39-44

7.8% had cardiovascular diseases. Hypertension was found most frequently in women. Those in sedentary occupations requiring little physical exercise were more susceptible to hypertension than those engaged in physical work. As a result of this study, it was recommended that steps be taken to combat rheumatic fever, influenza, and other infectious diseases, to specifically treat those who live and work under conditions which promote cardiovascular disease, and to carry out sanitary-educational work in the field of cardiovascular diseases.

2/2

- 94 -

1/2 021  
UNCLASSIFIED  
PROCESSING DATE--30OCT70  
TITLE--CONCENTRATION OF FREE AMINO ACIDS IN THE BLOOD OF PATIENTS WITH  
UTERINE CANCER DURING SURGICAL AND RADIATION TREATMENT -U-  
AUTHOR--(05)--TYUTIN, L.A., NIKITINA, M.P., SEREGIN, M.S., TYUTINA, YE.M.,  
UDALOVA, I.YE.  
COUNTRY OF INFO--USSR  
SOURCE--VOP. ONKOL. 1970, 16(2), 29-33  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--AMINO ACID, REPRODUCTIVE SYSTEM, CANCER, SURGERY,  
RADIOTHERAPY, PAPER CHROMATOGRAPHY, ENZYME ACTIVITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1998/0251  
STEP NO--UK/0506/70/016/002/0029/0033  
CIRC ACCESSION NO--AP0120941  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120941

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CONC. OF FREE AMINO ACIDS WAS INVESTIGATED BY PAPER CHROMATOG. IN THE BLOOD OF WOMEN WITH UTERINE MALIGNANCY, AFTER SURGERY OR RADIOTHERAPY. IN CASES OF MALIGNANCY, A RISE IN THE LEVEL OF CYSTINE, SERINE, GLYCINE, TRYPTOPHAN AND PHENYLALANINE WAS RECORDED, WITH A FALL IN HISTIDINE, GLUTAMINE, AND GLUTAMIC ACID. AFTER DRASTIC SURGERY, LEVELS RETURNED TO NORMAL BY 3 WEEKS. THE INCREASES WERE GREATER IN ADVANCED CASES. AFTER RADIOTHERAPY, THE VALUES TEND TO BE HIGHER, AND MAY BE DUE TO CHANGED ACTIVITY OF CERTAIN ENZYME SYSTEMS.

ACAD. MED. SCI., LENINGRAD, USSR.

FACILITY: S. M. KIROV MIL.

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117862

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A THERMOSTABLE ENZYME PREPN. SPLITTING THE GLUCOSE DIAMINE LINKAGE IN GLYCOPEPTIDES WAS ISOLATED FROM THE OVOMUCOID OF POND SNAIL (L. STAGNALIS) AFTER FRACTIONAL SALTING OUT, HEAT INACTIVATION OF PART OF THE ACCOMPANYING ENZYMES, AND PURIFICATION ON SEPHADEX. FURTHER SEPN. ON SEPHADEX YIELDED A PREPN. HOMOGENEOUS ON ELECTROPHORESIS AND ULTRACENTRIFUGATION, AND WHICH DID NOT ACT ON BETA,D, GLUCOSIDES AND PEPTIDES. COMPARISON OF THE GLUCOSIDE AMIDASE ACTIVITY AT VARIOUS STAGES OF PURIFICATION INDICATED THAT THE ISOLATED ENZYME SPLITS THE POLYSACCHARIDE ASPARAGINE LINKAGE IN GLYCOPEPTIDES ONLY WHEN THE AMINO AND CARBOXYL GROUPS OF THE AMINO ACID ARE FREE. IN COMPOS. WITH LONGER PEPTIDE CHAINS THIS SPLITTING OCCURRED ONLY AFTER PRELIMINARY ACTION OF PEPTIDASES PRESENT IN THE SNAIL EXT. THESE ENZYMES PROBABLY FORM A COORDINATED ENZYME SYSTEM. FACILITY:  
INST. ORG. CHEM., MOSCOW, USSR.

UNCLASSIFIED

72 019  
TITLE--NEUTRONS AND GAMMA QUANTA FROM THE TERNARY FISSION OF CALIFORNIUM  
252--U--  
AUTHOR--(05)--ADAMOV, V.M., DRAPCHINSKIY, L.V., KOVALENKO, S.S., PETRZHAK,  
K.A., TYUTYUGIN, I.I.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(5), 1001-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--NEUTRON, GAMMA QUANTUM, NUCLEAR FISSION, CALIFORNIUM ISOTOPE,  
EXCITATION ENERGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0578  
STEP NO--UR/0367/70/011/005/1001/1005  
ARC ACCESSION NO--AP0137663  
UNCLASSIFIED

272 019  
IRC ACCESSION NO--AP0137663 UNCLASSIFIED PROCESSING DATE--27NOV70  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FAST N AND GAMMA QUANTA ARE  
MEASURED FOR SPONTANEOUS FISSION OF PRIME252 CF WITH EMISSION OF LONG  
RANGE ALPHA PARTICLES, IN RELATION TO THEIR EMISSION FOR BINARY FISSION.  
FRAGMENTS WERE REGISTRATED WITH AN IONIZATION CHAMBER, ALPHA PARTICLES  
WITH A SURFACE BARRIER DETECTOR, N WITH A STILBENE CRYSTAL, AND GAMMA  
RAYS WITH A NaI(TL) CRYSTAL. THE N NO FOR THE TERNARY FISSION WAS 2.83  
PLUS OR MINUS 0.07. THIS VALUE DIFFERS SLIGHTLY FROM THAT FOUND BY  
NARDI AND FRAENKEL (1968), 3.11 PLUS OR MINUS 0.06. THE NOS. AND  
SPECTRA OF THE GAMMA QUANTA ARE EQUAL IN BOTH BINARY AND TERNARY FISSION  
PROCESSES. THE N AND GAMMA QUANTA EMITTED WITH ENERGIES GREATER THAN 2  
MEV DECREASE WITH RISE OF THE ALPHA PARTICLE ENERGY. IT IS ESTD. THAT  
THE FRAGMENT EXCITATION ENERGY IS 7 MEV AT THE INSTANT OF THE ALPHA  
PARTICLE EMISSION.

UNCLASSIFIED

USSR

UDC: 51

TYUTYUKIN, V. K.

"Local-Optimal Plan in the Problem of the Processing of Parts  
With the Same Technical Routing"

Leningrad, V sb. Primeneniye mat. v ekon. (Application of Mathematics to Economics--collection of works) Leningrad University, No 8, 1973, pp 3-20 (from RZh--Matematika, No 1, 1974, Abstract No 1V517)

Translation: The simplest model -- the Johnson problem -- of calendar planning is considered. The author examines the characteristics of the time-table structure. On the basis of these characteristics, an algorithm is set up for finding some permissible plan for which the local minimum of the function-criterion (in metrics specified by the author) is attained. No estimate is given of the closeness of the plan obtained to the optimum. V. Portugal.

1/1

- 49 -

USSR

UDC: 621.315.592 3

CHIGOGIDZE, Z. N., KHUCHUA, N. P., GUTNIK, L. M., KHARATI, R. G., VARLAMOV,  
I. V., BEKIREV, U. A., TYUTYUN, A. A.

"Concerning the Mechanism of Failure of Gunn Diodes"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1670-  
-1676

Abstract: Devices based on the Gunn effect operate most effectively at high bias voltages; however, increasing the voltage causes breakdown of the device. At present there is no unanimous opinion on the mechanism of failure and degradation of Gunn diodes. In this paper the authors investigate co-planar Gunn diodes with plane-parallel and annular electrode configurations both with and without a silicon dioxide passivating coating. The diodes were tested in the pulse mode. It is shown that in accordance with previously available experimental data the failure of Gunn diodes takes place as a result of formation of a shorting channel between the contacts of the device. Information is obtained on the dynamics of the visible portion of the breakdown by means of motion picture photography of this process through an optical microscope. It is shown that silicon dioxide passivation of the

1/2



USSR

CHIGOGIDZE, Z. N. et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9,  
Sep 72, pp 1670-1676

active region has an appreciable effect on the nature of the visible portion of the breakdown and on the ratio of the breakdown voltage to the threshold voltage. A microscopic x-ray analysis is made of the composition of the contact regions and the channel on various stages of thermal breakdown. It is found that a transverse magnetic field affects the position of the shorting channels and the ratio of the breakdown voltage to the shorting voltage. A study is made of Gunn diode emission in the infrared region of the spectrum at voltages close to the breakdown voltage. It is concluded that the cause of failure of Gunn oscillators at high bias voltages is the formation of current strings caused by the development of an S-shaped current-voltage curve due to impact ionization when a strong field domain passes over the specimen. The authors thank M. S. Shur for discussing the results of the paper, and N. N. Mamatsashvili for taking part in the measurements.

2/2

- 100 -

USSR

UDC 620.193.43

CHEKVERIKOV, A. V., PAVLENKO, N. A., TYUTYUNIK, O. A., and KORCHINSKAYA, O. A.,  
Academy of Sciences UkrSSR, Institute of General and Inorganic Chemistry

"Investigation of the Corrosion Resistance of Nickel in  $\text{SnCl}_2$ -KCl Salt Melt"

Moscow, Zashchita Metallov, Vol 9, No 2, Mar-Apr 73, pp 192-194

Abstract: The corrosion resistance of Ni in 80%  $\text{SnCl}_2$ -20%KCl-melt was investigated by the weighing method at  $300^\circ$ , in order to obtain data necessary for the production of a semi-industrial unit for electrolytic tin-plating. The contents of metals in the melt, in wt.% after testing, are indicated and the results of corrosion tests of 4-64 hrs duration, conducted on a series of specimens in protective nitrogen atmosphere and without it, are discussed. A considerably higher corrosive pitting took place on specimens without protective atmosphere, the corrosion rate reaching a maximum after four testing hours. The corrosion rate of partially submerged specimens was four times higher than the corrosion rate of completely submerged specimens. In nitrogen atmosphere, the corrosion rate was independent of the degree of submersion. One figure, two tables, eight bibliographic references.

1/1

USSR

UDC:622.7:321.9.004

AKOPOVA, K. S., DOKSHINA, I. D., TYUTYUNNIK, N. D., YAKUBOVICH, I. A.,  
ZADOROZHNYI, V. G., BELOGAY, P. D., DEGTYARENKO, A. V., TISHCHENKO, A. G.

"Use of Ultrasound in Enrichment of Titanium-Zirconium Deposits"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 86-89

Abstract: A method has been developed for application of acoustical oscillations to minerals to change their surface properties before enrichment. This article presents results of an investigation of the influence of ultrasonics on the minerals in titanium-zirconium placer deposits. It has been established that 1-3 minutes action of ultrasound at 20 KHz and an intensity of  $3.8 \text{ W/cm}^2$  greatly activates the flotation of minerals by the flotation oil. The yield of minerals in the foam product increases as follows: zirconium from 18.6 to 98.9%, rutile from 3.0 to 97.5%, ilmenite from 0 to 94%, staurolite from 0 to 90%. The expenditure of collectors is also reduced and the flotation properties of minerals from different deposits are made more similar.

1/1

- 47 -

1/2 008  
UNCLASSIFIED  
TITLE--USE OF OLEFINS FOR PREPARING ALKYL SULFONATES -U-  
PROCESSING DATE--30OCT70  
AUTHOR--(05)-TYUTYUNNIKOV, B.N., KARETNIKOVA, V.S., BUKHSHTAB, Z.I.,  
YUSHCHENKO, YE.P., GASYUK, L.V.  
COUNTRY OF INFO--USSR  
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 34-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--ALKENE, BIODEGRADABLE DETERGENT, AMMONIUM COMPOUND,  
SULFONATION, SULFITE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1997/0568  
STEP NO--UR/0318/70/000/002/0034/0036  
CIRC ACCESSION NO--AP0119486  
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119486

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NH SUB4 HSO SUB3 WAS ADDED TO HIGHER ALPHA OLEFINS IN THE PRESENCE OF OXIDIZERS TO PRODUCE BIODEGRADABLE SULFONATE DETERGENTS. AIR BUBBLING AND PEROXIDES WERE USED IN THE PRESENCE OF SALTS OF METALS WITH VARIABLE VALENCE. THE REACTANTS WERE HEATED IN CYLINDRICAL REACTORS TO 80DEGREES AND AIR BUBBLED THROUGH FOR 4 HR, THEN THE REACTION MIXT. WAS TRANSFERRED TO THE SETTLER AND COOLED TO 20-50DEGREES. AFTER 3-4 HR, A MINERAL SALT LAYER WAS SEPD. TO BOTTOM. THE UPPER HYDROCARBON LAYER WAS RECYCLED. THE MIDDLE LAYER, CONTG. AN ALC. AQ. SOLN. OF SULFONATES, WAS DILD. 1:1 WITH H SUB2 O AND THE REMAINING HYDROCARBONS WERE EXTD. WITH GASOLINE. THE SULFONATES WERE CONCD. BY DISTG. OFF ALCS. AND H SUB2 O TO OBTAIN AN NH SUB4 ALKYL SULFONATE CONC. CONTG. 45-53PERCENT ACTIVE SUBSTANCE. DATA ON THE PROCESS ARE PRESENTED. FACILITY: KHARKOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

1/2 012  
UNCLASSIFIED  
TITLE--EFFECT OF HYDROGEN, DISSOLVED IN THE METAL OF A HYDROGENATION  
CATALYST, ON THE TRANSESTERIFICATION OF GLYCERIDES -U-  
AUTHOR--(02)-TYUTYUNNIKOV, B.N., MASTRUK, M.SH.  
PROCESSING DATE--23OCT70  
COUNTRY OF INFO--USSR  
SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 18-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY  
TOPIC TAGS--HYDROGEN, ESTERIFICATION, GLYCERIDE, HYDROGENATION, CATALYST  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0548  
STEP NO--UR/9085/70/036/002/0018/0020  
CIRC ACCESSION NO--AP0119467  
UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0119467

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

THE PRESENCE OF H IN NI OR PD

CATALYST DID NOT HAVE ANY SIGNIFICANT

INFLUENCE ON THE INTENSITY OF

TRANSESTERIFICATION OF GLYCERIDES.

FACILITY: POLITEKH. INST.

IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

UNCLASSIFIED  
PROCESSING DATE--27NOV70  
TITLE--FLUX FOR WELD DEPOSITING HARD ALLOYS WITH HIGH FREQUENCY CURRENTS  
-U-  
AUTHOR--(05)--LIPTUGA, I.V., ALAKSEYEV, I.L., CHEREPNEV, D.A., DRIVYKH,  
N.A., TYUTYUNZH, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--U.S.S.R. 265,690  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--WELDING FLUX, WELDING TECHNOLOGY, HARD ALLOY, METAL DEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/1066

CIRC ACCESSION NO--AA0130101

UNCLASSIFIED

STEP NO--UR/0482/70/000/000/0000/0000



2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130101

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A FLUX WITH A LOWER M.P. THAT  
IMPROVES THE QUALITY OF THE BEADED METAL HAS THE FOLLOWING COMPN.: NA  
SILICATE 12022, H SUB3 80 SUB3 58-67, SILICOCALCIUM 15-20PERCENT.  
FACILITY: OKTYABR'SKAYA REVOLYUTSIYA, PLANT OF AGRICULTURAL EQUIPMENT  
CONSTRUCTION, ODESSA.

UNCLASSIFIED

USSR

UDC 546-655'74'28:548.3

BODAK, O. I., MIS'KIV, M. G., TYVANCHUK, A. T., KHARCHENKO, O. I., and  
GLADYSHEVSKIY, YE. I., L'vov State University imeni Ivan Franko

"System Cerium--Nickel--Silicon in the Region 33.3 - 100 at. % Ce"

Moscow, Neorganicheskiye Materialy, Vol. 9, No 5, May 73, pp 864-866

Abstract: A study is made of the phase ratio of the system Ce-Ni-Si in the region 33.3 - 100 at. % Ce. A complete isothermal cross section of the diagram of state is constructed. The area of homogeneity and the crystalline structure of compounds formed in alloys in the interval 33.3 - 100 at. % Ce are determined.

1/1

- 73 -

USSR

UDC 621.90

TYVES, L. I., Candidate of Technical Sciences and ANSHIN, S. S., Graduate Student Moscow Aviation Institute

"Qualitative Evaluation of Manipulators"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 11, 1971, pp 41-45.

ABSTRACT: Criteria are suggested for the accuracy of reproduction of positions of the master mechanism by the actuating mechanism of a copying manipulator, as well as the quality of sensation of forces by the feedback tracking systems. An example is presented for calculation of these criteria for a planar model of a copying manipulator kinematically similar to the human hand. The "sensing error" used to evaluate the operation of the manipulator combines the errors in transmission of force and torque.

1/1

- 84 -

USSR

UDC 612.816-087.5

NAGAYEV, I. YA., OKSENGENDLER, G. I., and TZHEVKIN, V. A., First Medical  
Institute imeni I. P. Pavlov, Leningrad

"A Method of Determining the Threshold of Neuromuscular Excitation in Laboratory Animals"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 5, 1971, pp 48-49

Abstract: The authors describe a device capable of recording threshold values of neuromuscular excitation in response to electrical and chemical stimulation more objectively than current methods based on measurement of chronaxy. The device provides for uniform increase in voltage at the electrodes. It automatically turns off the current, measures the internal resistance of the animal's body, and records the results. Experiments on mice showed that the device was able to detect the minimum doses of hydrazine and tetraethyl lead capable of affecting the threshold of neuromuscular excitability.

1/1

- 73

UDC 632.95

USSR

CHEKAREVA, T. G., VASSERMAN, A. M., VORONKOVA, V. V., UAKIMENKO, Ye. F., and BASKAKOV, Yu. A.

"Photochemical Decomposition of Meturin, Its Derivatives and Analogs"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of words), No 2, Moscow, 1972, pp 285-291 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N575 by G. A. Kosminskaya)

Translation: The photochemical decomposition of the herbicide meturin (I) and some of its derivatives and analogs following UV irradiation was studied. The end product of the photochemical decomposition of I is PhNHCONHMe (II). EPR-spectroscopy was used to show that the photochemical decomposition of I proceeds through the formation of the N-methylcarbamoyl-N-phenyl nitrate radical (III). Identical EPR spectra can be obtained by the oxidation of I by PbO<sub>2</sub>. I and II are found by thin-layer chromatography among the decomposition products of III. There is a direct relationship between the sensitivity of the derivatives and analogs of I to UV light and their herbicidal activity.

1/1

- 51 -

UDC 621.397.621

USSR

BEL'SKIY, V. N., DAVIDENKO, S. N., MARKOVA, Yu. V., PILATOVSKIY,  
A. I., SMIRNOV, A. Ye., and UAKIN, Ye. S.

"Mobile Magnetic Video Recording Station PVS-1"

Moscow, Tekhnika kino i televideniya, No. 6, 1971, pp 33-37

Abstract: The advantage of this mobile video recording station is that it enables personnel involved in TV programming not only to escape the confines of the studio but to transcend the line-of-sight limitations of the portable transmitter. The station was built by order of the State Committee of the Council of Ministers, USSR, for Television and Radio, in the VNIITR /expansion unknown/ and was completed in 1970. Short descriptions are given of the equipment complement, the functional system of the station, the video channel, the sound accompaniment, the recording of directors' comments, and other facilities the station affords. Diagrams are given of the equipment layout in this mobile recording studio, and of interconnections of the system blocks. Photographs of some of the equipment are also shown.

1/1

UDC 621.395.74.01

USSR

GOGIN, YU. A., VALENTOV, V.A.

"Determination Of The Routes For Information Transmission In Communication Networks"

Sb. nauchn. tr. TsNII Svyazi. Leningr. fil. (Collection Of Scientific Works Of The Central Scientific-Research Institute Of Communications. Leningrad Branch), 1970, Issue 5, pp 68-73 (from RZh--Elektrosvyaz', No 2, February 1971, Abstract No 2.64.33)

Translation: A method is considered for determining the routes for information transmission between given junction points of complex communication networks, based on the formulation and solution of a system of logical equations. The proposed method makes it possible to determine the minimum route for information transmission of any choice, and also the route with a given rank with given limitations on the switching possibilities of the junction points of the net. Determination of the routes for information transmission in complex communication networks with the aid of logical equations makes it possible to find the probability of connectivity between given junctions points of the network. 2 ill. 10 ref. O.N.

1/1

1/2 012  
UNCLASSIFIED  
TITLE--POSSIBLE PREDICTION OF THE AMINO ACID CONTENT IN BACTERIAL PROTEIN  
USING THE NUCLEOTIDE COMPOSITION OF DNA -U-  
AUTHOR--(05)-SAMOILOV, P.M., KOKURINA, N.A., UAROVA, V.N., VOROBYEVA, L.I.,  
GRISHCHENKO, V.M.  
COUNTRY OF INFO--USSR  
SOURCE--PRIKL. BIOKHM. MIKROBIOL. 1970, 6(1), 44-7

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIA, MYCOBACTERIUM, CHEMICAL COMPOSITION, AMINO ACID,  
NUCLEOTIDE, DNA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/0571

STEP NO--UR/0411/70/006/001/0044/0047

CIRC ACCESSION NO--AP0117801

UNCLASSIFIED



UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 012

CIRC ACCESSION NO--AP0117801

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE BETWEEN COMPN. OF DNA AND AMINO ACID CONTENT IN BACTERIAL PROTEIN WAS USED FOR PROVING THE POSSIBILITY OF USING PUBLISHED DATA ON DNA COMPN. FOR PREDICTING AMINO ACIDS CONTENT OF THE BACTERIAL PROTEIN. THE NUCLEOTIDE COMPN. OF DNA AND AMINO ACIDS IN PROTEIN OF LACTOBACTERIUM PLANTARUM AND MYCOBACTERIUM LUTEUM WERE STUDIED. SUBSTANTIAL DIFFERENCES IN THE COMPN. OF PROTEINS IN THESE BACTERIA WERE FOUND, ESP. IN THE CASE OF ASPARTIC ACID, PROLINE, ALANINE, VALINE, METHIONINE, TYROSINE, HISTIDINE, AND ARGinine. THE ANALYSES SHOWED THAT THE RELATION BETWEEN THE NUCLEOTIDE COMPN. OF DNA AND AMINO ACIDS CONTENT OF TOTAL BACTERIAL PROTEIN WAS TRUE AND RESPECT TO 9 AMINO ACIDS OUT OF 16 STUDIED (ASPARTIC ACID, SERINE, GLUTAMIC ACID, PROLINE, GLYCINE, METHIONINE, ISOLEUCINE, TYROSINE, AND ARGinine). IN THE CASE OF ASPARTIC ACID, PROLINE, AND METHIONINE THE EXPTL. FOUND DEVIATIONS IN THE CONTENT OF AMINO ACIDS IN PROTEINS OF L. PLANTARUM IN COMPARISON WITH PROTEINS OF M. LUTEUM WERE HIGHER THAN THEORETICAL DEVIATIONS. THE NUCLEOTIDE COMPN. OF DNA IN L. PLANTARUM AND M. LUTEUM PROVE THAT DNA OF L. PLANTARUM AND M. LUTEUM IS OF AT AND GC TYPE, RESP. THE CONTENT OF METHIONINE IN THE PROTEIN OF L. PLANTARUM WAS 2.7PERCENT AND THIS WAS HIGHER THAN FOR THE PROTEIN OF M. LUTEUM. FACILITY: INST. BIOCHEM, PHYSIOL MICROORG., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 639.389.1:538.213:537.311.31:  
669.15-194.56

BELENKOVA, M. M., UBAROV, A. I., MALUSHEV, K. A., MIKHEYEV, M. N.

"Change in Strength, Electrical and Magnetic Characteristics of Austenitic Steel Type 40Kh4G18F During Heat Treatment and Thermomechanical Treatment"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 5, Nov 73, pp 971-977.

Abstract: Type 40Kh4G18F aging austenitic steel is hardened by aging, cold and hot plastic deformation, both individually and together. All of the hardening treatments increase the yield point and magnetic permeability of the steel, but not to the same extent for different treatments. Electrical resistance changes more complexly. The greatest increase in magnetic permeability is observed upon cold plastic deformation, the least -- with combined treatment including aging and hot plastic deformation. However, with all hardening treatments the steel has a low value of magnetic permeability, and is therefore a good high-strength nonmagnetic material.

1/1

- 45 -

Hydraulic and Pneumatic

USSR

LEVSH, I. P., HIYAZOV, M. I., UBAYDULLAEV, A. K., MISHINA, V. N., MUKHITDINOV, KH. KH.

"Mass Transfer and Hydrodynamics in 3-phase Fluidized Bed Using Various Fillers"

Gidrodinamika, Teplo- i Massoobmin v Psevdozhizh. Sloye [Hydrodynamics, Heat and Mass Transfer in Fluidized Bed], Ivanovo, 1971, pp 202-207. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B1121, by V. A. Kernerman).

Translation: Studies involving fluidization of sprinkled packing (plastic rings, hollow balls and cubes) in three gas-liquid systems on grid plates and overflow plates in apparatus 145 to 300 m in diameter have shown that in the initial period of fluidization of the filler in the 3-phase layer, 10-15 times greater phase contact surface is created than in a bubbling layer without filler. Movement of the filler and pulsating fluid drain through the holes in the plates facilitate intensive renewal of the phase contact surface and increased mass transfer rates. Data are presented on the influence of gas flow rate and sprinkling density on bed resistance and dynamic layer height, as well as the observed values of mass transfer coefficients and the contact surface between phases calculated according to the method suggested. 13 biblio refs.

1/1

UDC 547.944/945

USSR

UBAYDULLAYEV, K., BESSONOVA, I. A., and YUNUSOV, S. YU., Order of the Labor  
Red Banner Institute of the Chemistry of Natural Products, Acad. Sc. UzSSR

"Haplophyllum Pedicellatum, H. Obtusifolium and H. Bucharicum Alkaloids.  
Structure of Bukharamine"

Tashkent, Khimiya Prirodnikh Soyedineniy, No 3, 1972, pp 343-346

Abstract: From the overground portion of H. pedicellatum Bge. haplopin and robustin were isolated; H. obtusifolium yielded skimmianin and evoxin. From the mother liquids of all alkaloids of the overground portion of H. bucharicum Litv. it was possible to isolate  $\gamma$ -fagarin, benzamido and a new alkaloid -- lukharamin - an  $\alpha, \beta$ -substituted derivative of  $\alpha, \beta$ -dihydrofuranoquinolone-4, m.p. 223°. It is optically inactive, dissolves well in methanol, chloroform, and with heating in acids. The roots of H. bucharicum contain six known alkaloids: dictamin, skimmianin,  $\gamma$ -fagarin, robustin, haplopin, and bukharamin.

1/1

- 5 -

USSR

UBERMAN, V. I.

"Theory of the Method of Determination of Numbers, the Sums of Which do not Coincide"

Mat. Modelir. i Teoriya Elektr. Tsepey [Mathematical Modeling and the Theory of Electric Circuits -- Collection of Works], No 10, Kiev, Nauk. Dumka Press, 1973, pp 76-78 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V769).

Translation: A principally new method of construction of additively differing numbers in an ordered sequence is studied, having the following advantages: the maximum elements of the series produced by this method is less than the series constructed by known digit-by-digit methods; the elements of the series are placed in a narrower band of integers.

A theorem is proven, the result of which gives a basic recurrent relationship for the series of much simpler form, allowing the volume of the working file in computer memory to be virtually halved. The proof of the theorem has a clear geometric interpretation.

Author's view

1/1

UDC 51:155.001.57:612.82

USSR

UBERMAN, V. I.

"Problems of the Application of Dynamic Methods to the Theory of Control Systems"

Tekhn. Kibernetika. Vyp. 7 [Engineering Cybernetics, No 7 -- Collection of Works],  
Kiev, 1970, pp 35-46, (Translated from Referativnyy Zhurnal, Kibernetika, No 6,  
1971, Abstract No 6 V682 by V. Mikheyev).

Translation: A formalized approach is presented to the investigation of the trajectories of motion, determined by the sequence of states and time intervals between them in a control system. This is performed using the basic rule for the states of the system formulated in a work by V. F. Krotov (RZhMat, 1968, 4B579). According to this rule, the actual states of the systems at each moment in time can only be states corresponding to the local minima of a certain criterion called the potential. The advantages of the method of studying the motion of systems using this rule are noted.

Pharmacology and Toxicology

USSR

UBAYDULLAYEV, R. U.

"Determination of the Albumen Fraction of Blood Serum by the Method of Paper Electrophoresis for the Purpose of Establishment of Maximum Tolerated Concentrations of Noxious Materials in Atmosphere"

Tr. Uzb. NII San., Gigiyeny, i Profzabolevaniy (Proceedings of the Uzbekistan Scientific Research Institute of Sanitation, Hygiene, and Professional Diseases), 1973, No 5, pp 161-164 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 2184)

Translation: By means of the refractometric method and paper electrophoresis (EF) the changes of the total albumen content and its fractional composition has been determined in blood serum of rats subjected to a round the clock effect of ethanol for a period of 3 months ( $I$ : 5, and 25 mg/m<sup>3</sup>). On the 50th day of intoxication with ethanol the quantity of blood serum albumen dropped to 32%, while the quantity of 3- and -globulines increased to 26 and 17.1% respectively in animals getting  $I$  at a concentration of 25 mg/m<sup>3</sup> (in the controls -- 43.7; 20.9 and 14.6% respectively). Intoxication with  $I$  at a dose of 5 mg/m<sup>3</sup> caused no substantive changes in the albumen fractions of the blood. Total quantity of albumen serum did not change in any

1/2

USSR

UBAYDULLAYEV, R. U., Tr. Uzb. NII San., Gigiyeny, i Profzabolevaniy, 1973,  
No 5, pp 161-164

of the groups. Determination of albumen fractions of blood serum by means  
of paper EF can be recommended for the determination of maximum permissible  
concentration of noxious materials in the atmosphere.

2/2

- 50 -



UDC 613.632:614.71:612.591.1

USSR

UBAYDULLAYEV, R. U., Doctor of Medical Science, Laboratory of Pure Air,  
Uzbek Scientific Research Institute of Sanitation, Hygiene, and Occupational  
Diseases

"Hygienic Evaluation of Some Pesticides Used Under the Conditions of a Hot  
Climate"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 40-44

Abstract: The effect of pesticides is stronger in Central Asia under the  
combined conditions of high air temperature, low humidity and high radiant  
energy than in less harsh conditions. Methods were developed to determine  
mil'beks and the procedures to determine hexachlorane, fozalone and phosphamine  
were improved. Air samples were analyzed for these four compounds at different  
distances from application and for using different tractors for application.  
Mil'beks, hexachlorane, fozalone, and phosphamine were completely removed  
from the air by the 4th, 5th, 6th and 7th day, respectively. For these four  
compounds in the atmosphere, the single maximum permissible concentrations  
recommended are 0.01, 0.05, 0.01, and 0.003 mg/m<sup>3</sup> respectively. Recommended  
1/2

- 42 -

USSR

UBAYDULLAYEV, R. U., Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 40-44

limits for air over populated areas are 0.1, 0.05, 0.003, and 0.01 mg/m<sup>3</sup> respectively. In addition to the increased effect of pesticides at high temperature, they also vaporize more easily and therefore remain in the air for a longer time.

2/2

UDC 621.774.35.001.4

USSR

PLYATSKOVSKIY, O. A., Doctor of Technical Sciences, POROKHNIKOV, YU. Z.,  
SULADZE, O. N., STATNIKOV, V. M., UBIRIYA, A. YE., Candidate of Technical  
Sciences, and TSERETELI, P. A.  
Principal Parameters of the Deformation Process by High-Temperature Thermo-  
mechanical Treatment of Pipes"

Dnepropetrovsk Metallurgicheskaya i Gornorudnaya Promyshlennost', No 4,  
(70), Jul-Aug 71, pp 34-37

Abstract: At many active pipe rolling plants, reduction mills can be utilized  
for high-temperature thermomechanical treatment (HTMT) of pipes. Workers  
of the All-Union Scientific Research Institute of Pipes and specialists of  
the Rustavsk Metallurgical Plant have developed the technology of HTMT of  
hot-rolled compressor pump pipes (73 x 5.5 mm) of carbon steels (brands 20  
and 35) and low-alloyed steel (36G2S) by rolling on a 20-cage reduction mill  
with rolls 350-400 mm in diameter. The HTMT technology is discussed by  
reference to diagrams showing the general arrangement and the change of the  
metal pressure on rolls under different rolling conditions. In HTMT the  
metal pressure on the rolls of pipes with precooling in deforming cases is  
approximately twice as high as in the standard process of hot reduction.  
Investigation data were used for planning an industrial experimental produc-

1/2

USSR

PLYATSKOVSKIY, O. A., et al., Metallurgicheskaya i Gornorudnaya Promyshlennost'  
No 4 (70), Jul-Aug 71, pp 34-37

tion sector of high-quality compressor pump pipes. Two illustrations,  
one table, three bibliographic references.

2/2

- 72 -

USSR

UDC 619:616.988.43-094:576.8

UBRANTSEV, N. M., SYUSYUKIN, A. A., SERGEYEV, V. A., and PROKHOROV, V. V.,  
All Union Scientific Research Foot-and-Mouth Disease Institute and All Union  
Scientific Research Institute of Veterinary Virology and Microbiology

"The Effect of the Passaging Temperature on Properties of Attenuated Foot-  
and-Mouth Disease Virus"

Moscow, Veterinariya, No 1, Jan 71, pp 37-39

Abstract: The epizootic strain (No 663) of A<sub>2</sub> foot-and-mouth disease virus was passaged in a culture of calf kidney cells 5 times at 37°C and 84 times at 24°C. The population and clonal lines of virus passaged 5 times at 37°C were pathogenic for mice and guinea pigs, capable of replicating at 37°C and 40°C, and had no cytopathic activity at 40°C. However, by the 84th passage at 24°C the virus was incapable of replication at 40°C, and several clones did not replicate at 37°C. After the virus was successively passaged at 30°C (30 times), 34°C and 37°C (10 times each) it gradually regained its lost properties, but could not replicate at 40°C. Thus, passaging foot-and-mouth disease virus at low temperatures and then culturing it at high temperatures produced attenuated variants with the properties of vaccine strains.

1/1

Pesticides

USSR

UDC 632.95

DOBRIYANIN, A. D., and ~~UBRANUS, YA.~~

"Organization of Health Inspection Over the Storage, Use and Transportation of Pesticides in Agriculture in the Brestskaya Oblast"

V sb. V S"yezd gigiyenistov, epidemiologov, mikrobiologov i infektsionistov Belorussii, 1971. Tezisy dokl. (Fifth Congress of Hygienicists, Epidemiologists, Microbiologists and Infectionists of Belorussia, 1971. Summaries of the Reports), Minsk, 1971, pp 70-72 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N372)

Translation: The health and epidemic control service for rayons in the Brestskaya Oblast has taken under observation all industries and organizations which use and distribute pesticides. Dispensary accounting for 1968 shows that there were 1,385 persons working with pesticides. Workers of 10 pest control detachments and 16 bases of the V/O "sel'khoztehnika" undergo a medical examination twice a year. P. V. Popov.

1/1

Electricity & Magnetism

USSR

UCHASTKIN, V. I., and SAMORUKOV, S. B., Moscow State University imeni M. V. Lomonosov

"Magnetoelastic Waves of Finite Amplitude"

Leningrad, Fizika Tverdogo Tela, No 11, Nov 70, pp 3348-3350

Abstract: The initial stage in the formation of traveling magnetoelastic waves of finite amplitude under an inhomogeneous distribution of the internal magnetic field in yttrium ferrite-garnet was studied. It is noted that spin waves of finite amplitude can be obtained in magnetoelastic ferrite systems and that a characteristic of these waves is the change in frequency along the envelop of the signal. This is attributed to expansion of the spectrum of the quasiharmonic magnetoelastic signal. In ferrite delay lines, expansion of the signal at high power levels always appears as a distortion in shape. The role of the instability of nonlinear ferromagnetic resonance in phenomena of this type was therefore studied. The study was conducted at a frequency of 3060 MHz in yttrium ferrite-garnet samples oriented along the [110] axis and having a fairly long spin relaxation time of  $10^{-6}$  sec. The magnetoelastic waves were excited and received by a method ordinarily

1/2

USSR

UCHASTKIN, V. I., and SAMORUKOV, S. B., Fizika Tverdogo Tela, No 11, Nov 70, pp 3348-3350

applied in ferrite variable delay lines. At low levels of the magnetoelastic signal, a linear relationship was obtained between the signal and the input electromagnetic power. When the threshold of nonlinear ferromagnetic resonance was achieved, saturation of the magnetoelastic pulse was observed. Almost simultaneously with saturation there occurs a decrease in the frequency of the basic maximum of the spectrum with respect to the frequency of the input signal. This frequency detuning is explained by the reverse reaction of spin waves excited at nonlinear ferromagnetic resonance. The periodic change in the spectrum was observed to study frequency detuning in different parts of the magnetoelastic pulse. With an increase in power the period of frequency oscillations along the pulse dropped and it is concluded that even in short signals one can obtain a similar oscillation and frequency, but at higher power levels.

2/2

- 40 -



USSR

UDC: 621.375.127(088.8)

BUTUZOV, Yu. A., ROZHDESTVENSKIY, A. N., SMOL'KOV, V. V., UCHAYEV, A. L.

"A Protection Device for a Low-Frequency Amplifier"

USSR Author's Certificate No 278771, filed 29 May 69, published 3 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D128 P)

Translation: A device is proposed for protecting an audio frequency amplifier under overloads. The device contains preamplification stages, a push-pull output, and a feedback circuit with transformer. To improve the reliability and speed of the protector, the base of the transistor in the feedback circuit is loaded by a diode bridge connected to the transformer, and the collector is loaded by a voltage divider. Connected between the resistors of the voltage divider is the controlling electrode of a protection thyristor. The cathode of this thyristor, the collector of the input transistor and the emitter of the output transistor (of different polarity) in the preamplifier are connected to the negative terminal of the power supply through a current-limiting resistor.

1/1

- 1 -

USSR

UDC 621.382.2

GONCHAROV, V. N., KLYUCHNIKOV, V. N., KRYLOV, L. N., LAVRISHIN, Yu. A.,  
LONCHIN, M. A., SEREZHKIN, Yu. N., UCHAYKIN, I. G., and YAMASHKIN, Yu. M.

"Role of Microplasma Phenomena in Determining the Properties of Silicon  
Avalanche Rectifiers"

Uch. zap. Mordovsk. un-t (Scientific Notes of Mordovskiy University), 1970,  
Issue 82, pp 3-20 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971,  
Abstract No 8B195)

Translation: The effect of microplasma phenomena on the characteristics of avalanche  
rectifiers is considered. A model of the microplasma is presented and the reasons  
for formation of microplasma are considered. The distribution of microplasma in  
avalanche rectifiers is presented for the area of the p-n junction and for breakdown  
voltages. Means are considered for an increase of the breakdown energy of avalanche  
rectifiers. Summary.

1/1

72 009 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--DECAY OF LUTETIUM-169 -U-  
AUTHOR--(05)-BALALAYEV, V.A., DZHELEPOV, B.S., MEDVEDEV, A.I.,  
TERNERSSEYANTS, V.YE., UCHEVATKIN, I.F.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 2-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY  
PIC TAGS--LUTETIUM ISOTOPE, RADIOACTIVE DECAY SCHEME, CONVERSION  
ELECTRON SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
COPY REEL/FRAME--1988/0230 STEP NO--UR/0048/70/034/001/0002/0011  
RC ACCESSION NO--AP0105306  
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--16OCT70

ARC ACCESSION NO--AP0105306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRUM OF CONVERSION E FROM PRIME169 LU WAS MEASURED OVER THE 400-900 AND 1000-500 DEV RANGES. THE LU FRACTION WAS OBTAINED BY CHROMATOGRAPHIC SEPN. FROM A TA TARGET IRRADIATED WITH 660-MEV RHO. MANY NEW TRANSITIONS WERE OBSERVED, AND OTHERS WERE REFINED, ALSO IN OTHER ENERGY RANGES. IN TOTAL, 156 TRANSITIONS WERE TABULATED WITH ENERGIES RANGING FROM 24.2 TO 2296.9 KEV TOGETHER WITH INTENSITIES OF CONVERSION K E. A COMPLETE DECAY SCHEME OF PRIME169 LU IS PRESENTED. FACILITY: VSES. NAUCH.-ISSLED. INST. METROL. IM. MENDELEEVA, LENINGRAD, USSR.

UNCLASSIFIED

4  
USSR

2  
BALALAYEV, V. A., DZHELEPOV, B. S., MEDVEDEV, A. I., TER-NERSESYANTS, V. YE.,  
UCHEVATKIN, I. F., and SHESTOPALOVA, S. A., All-Union Scientific Research Institute  
of Metrology imeni D. I. Mendeleyev

"On  $\text{Lu}^{169}$  Decay"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 34, No. 1, Jan 70,  
pp 2-11

Abstract: The conversion electron spectrum of  $\text{Lu}^{169}$  was measured on the  $\pi/2$   $\beta$ -spec-  
trometer of the Institute in the energy ranges 460-900 kev and 1000-1500 kev.  
Several tens of new lines were observed. A table of transitions in  $\text{Yb}^{169}$  occurring  
in the decay of  $\text{Lu}^{169}$  is compiled on the basis of these measurements and the data  
of other authors and covers transition energies from 24 kev to 2300 kev. The tran-  
sition energies are given together with the mean-square error, and also the inten-  
sities of K-conversion electrons, data on the intensities of  $\gamma$ -transitions, calcu-  
lated conversion coefficients, and the multipolarity. A decay scheme for  $\text{Lu}^{169}$  is  
given based on all the available data on  $\text{Yb}^{169}$  levels.

1/1

1/3 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--THE ROLE OF LYSOSOMES OF RETICULOENDOTHELIAL SYSTEM CELLS IN  
IMMUNOGENESIS -U-  
AUTHOR--UCHITEL, I.YA. *ll*  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 7, 1970,  
PAGES 65-75  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ENZYME, DIGESTION, EXCRETION, PROTEINASE, ACID PHOSPHATASE,  
ANTIGEN, SPLEEN, RABBIT, MOUSE  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0746 STEP NO--UR/0248/70/025/007/0065/0075  
CIRC ACCESSION NO--AP0137807  
UNCLASSIFIED

2/3 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137807

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANY PROTECTIVE REACTION OF THE ORGANISM IS BASED ON ITS ABILITY TO IDENTIFY A FOREIGN AGENT AND GET RID OF IT. THE MOST ANCIENT FORM OF SUCH FUNCTION IS DIGESTION. AND THE MAIN STAGES OF THE DIGESTIVE PROCESS, CONSUMPTION OF SUBSTANCE, DIGESTION AND EXCRETION, ARE THE SAME IN A MULTICELLULAR ORGANISM AND IN AN INDIVIDUAL CELL. IN COLLABORATION WITH E. L. KHASMAN AND L. G. ZAYTSEVA WE MADE A STUDY OF CATHEPSIN AND ACID PHOSPHATASE ACTIVITY IN THE CELLS OF RABBIT AND MOUSE SPLEENS FOLLOWING ADMINISTRATION OF VARIOUS ANTIGENS (TYPHOID FEVER VACCINE, BOVINE SERUM ALBUMIN, SHEEP ERYTHROCYTES, AND TETANUS TOXOID). ENZYMIC ACTIVITY WAS STUDIED IN THE CELLULAR CYTOPHASM (FIRST FRACTION) AFTER REMOVAL OF NUCLEI, MITOCHONDRIA AND LYSOSOMES, AND IN LYSOSOMES, ISOLATED BY DIFFERENTIAL CENTRIFUGATION, AFTER LYSIS WITH DISTILLED WATER (SECOND FRACTION). ACCORDING TO THE DATA OBTAINED IN OUR LABORATORY BY L. G. ZAYTSEVA, SINGLE INTRAVENOUS ADMINISTRATION TO RABBITS OF 50 MG OF BOVINE SERUM ALBUMIN HAD PRACTICALLY NO EFFECT ON ACTIVITY OF LYSOSOMAL ENZYMES IN THE SPLEEN. HOWEVER, ADMINISTRATION OF THE SAME DOSAGE TO PREVIOUSLY IMMUNIZED ANIMALS WAS ASSOCIATED WITH ACTIVATION OF ACID PHOSPHATASE AND (LESS SIGNIFICANT) CATHEPSIN IN THE LYSOSOME FRACTION FOR THE FIRST DAY.

IN THE LIGHT OF ALL THESE DATA INVESTIGATION OF THE ROLE OF LYSOSOMES AND THEIR ENZYMES IN PROCESSING OF ANTIGENIC MATERIAL, AND FIRST OF ALL INVESTIGATION OF THE PROPERTIES OF ANTIGENS ISOLATED FROM THE LYSOSOME HELP ISOLATE IMMUNOGENIC SUBSTANCES IN PURE FORM. IT IS IMPORTANT TO DETERMINE THE SIGNIFICANCE OF COMPLEX FORMATION OF ANTIGEN WITH RNA IN IMMUNOGENESIS.

UNCLASSIFIED

3/3 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0137807  
ABSTRACT/EXTRACT--FACILITY: INSTITUTE OF EPIDEMIOLOGY AND MICROBIOLOGY  
IMEMI N. F. GANALEYA, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED



USSR

AKIMATOV, A. S., UCHUVATKIN, G. N.

"Study of the Interaction of Metals with Boundary Friction"

Poverkhnost. Sily v Tonkikh Plenkakh i Dispers. Sistemakh [Surface Forces and Thin Films and Dispersed Systems -- Collection of Works], Moscow, Nauka Press, 1972, pp 307-316, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 A80, by the authors).

Translation: The specific attractive forces  $P_m$  of 12 different metals are measured. It is shown that as the lubricant layer thickness in  $H$  increases from  $2 \cdot 10^{-8}$  to  $1.3 \cdot 10^{-7}$  m, the value of  $P_m$  decreases according to the rule  $P_m = KH^{-4}$ . It is shown that under boundary friction conditions with metals, in addition to the short-radius attractive and repulsive forces, forces of relatively large radius of action are also felt. A correlation is determined between  $P_m$  and the work function of the metals studied, as well as between  $P_m$  and the coefficient of elasticity of the friction contact. 9

Biblio. Refs.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--DEPENDENCE OF THE EFFECTIVENESS OF POLYETHYLENE GLYCOL ACTION ON  
THE PBR OF A PHOTOGRAPHIC EMULSION -U-  
AUTHOR-(03)-SHEBERSTOV, V.I., OVECHKINA, T.G., UCHUVATKINA, T.K.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NAUCH. PRIKL. FOTOGR. KINEMATOGR. 1970, 15(1) 70-1  
DATE PUBLISHED-----70  
SUBJECT AREAS--METHODS AND EQUIPMENT, CHEMISTRY  
TOPIC TAGS--PHOTOGRAPHIC EMULSION, PHOTOGRAPHIC CHEMISTRY, POLYETHYLENE,  
GLYCOL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/0308 STEP NO--UR/0077/70/015/001/0070/0071  
CIRC ACCESSION NO--AP0053293  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0053293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PBR OF A MODEL AMMONIACAL AG IODOBROMIDE PHOTOGRAPHIC EMULSION (3 MOLE PERCENT AGI BASED ON TOTAL AG HALIDE) CONTG. POLYETHYLENE GLYCOL (1) WAS MEASURED TO DET. THE SENSITIZING EFFECTIVENESS OF I. IN EACH SERIES OF EXPTS. THE STARTING EMULSION WAS DIVIDED INTO SEVERAL PORTIONS (SECONDARY EMULSIONS) BEFORE THE 2ND RIPENING, AND THE PBR WAS DETD. IN EACH OF THEM BY ADDN. OF KBR OR AGNO SUB3 SOLN. THE PH OF ALL THE SECONDARY EMULSIONS WAS APPROX. THE SAME (6.15-6.45). THE SECONDARY EMULSIONS WERE SUBJECTED TO A 2ND RIPENING UNTIL THE LIGHT SENSITIVITY REACHED A MAX. THE EFFECTIVENESS OF I, COMPARED AT THE SAME RELATIVE DEGREE OF 2ND RIPENING, DECREASED WITH INCREASING PBR. THE EFFECTIVENESS OF I ALSO DECREASED WITH INCREASING DEGREE OF RIPENING. THUS, THE EFFECTIVENESS OF I UNDER PRACTICAL CONDITIONS WAS SO SMALL THAT IT WILL LIKELY BE ELIMINATED WHEN TECHNIQUES FOR PREPG. STABLE PHOTOGRAPHIC EMULSIONS WITH HIGH PBR (IS GREATER THAN OR EQUAL TO 4.0) ARE DEVELOPED.

UNCLASSIFIED

USSR

UDC 621.762.002.5(088.8)

UDACHIN, I. V., MAKAROV, V. S., TIMOSHIN, D. Ya., GAYEV, O. B., and GRIN, L. T.  
"Device for Processing Powdered Materials With Liquids"

USSR Author's Certificate No. 268610, Filed 1/07/68, Published 3/08/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract  
No. 2 G472 P).

Translation: The device includes a container, the base of which is  
equipped with a drainage aperture and a perforated barrier. In order to  
eliminate oxidation of the powder near the bottom of the container as it  
is dried, an automatic valve is mounted coaxially with the drainage  
aperture for drainage of the liquid.

1/1

- 41 -